

ABSTRACT OF THE DISCLOSURE

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Stabilizers to be disposed on a surface of a semiconductor device or test substrate and methods of fabricating and disposing the stabilizers on semiconductor devices and test substrates. Semiconductor devices and test substrates including the stabilizers are also disclosed, as well as assemblies wherein the stabilizers are disposed between a semiconductor device and a test substrate. One or more of the stabilizers are disposed on the surface of a semiconductor device or test substrate prior to bonding the semiconductor device face-down upon the test substrate. Upon assembly of the semiconductor device face-down upon a test substrate and establishing electrical communication between contact pads of the semiconductor device and test pads of the test substrate, such as with conductive structures, the stabilizers prevent the semiconductor device from tipping or tilting relative to the test substrate. The stabilizers may be preformed structures which are attached to a surface of a semiconductor device, test substrate, or both. Alternatively, the stabilizers can be fabricated on the surface of the semiconductor device, the test substrate, or both. A stereolithographic method of fabricating the stabilizers is disclosed. The stereolithographic method may include use of a machine vision system including at least one camera operably associated with a computer controlling a stereolithographic application of material so that the system may recognize the position and orientation of a semiconductor device or test substrate on which the stabilizer is to be fabricated.

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